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PRELIMINARY EVALUATION OF AN IMAGE BASED LENGTH MEASUREMENT

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Abstract

The comparison between IsoTester and HVI showed that for the fiber length the relationship between the 2 instruments is very good. There is a slight level difference between the two instruments but it could be easily solved with adequate calibration procedures.

The comparison between the IsoTester and the AFIS showed that in general the AFIS length distributions show an excess of short fibers and a lack of the longest fibers when compared to the IsoTester length distributions. Therefore, our hypothesis is that the AFIS Fiber Individualizer breaks more fibers than the STI fiber sampler. We confirmed this hypothesis and observed that the extent of fiber damage is related to fiber fineness/maturity and fiber strength. Thus, interactions are likely.

The fiber breakage induced by the AFIS fiber individualizer may in fact simulate the fiber breakage that may occurs during cotton processing (opening and carding operations mainly). If this is the case, the AFIS could still be a good predictor of fiber processing efficiency. In this case, sample preparation that simulates the opening and carding stages could be added to the IsoTester. This instrument, being much faster than the AFIS, could help the cotton breeding industry. We need to settle the issue of whether the length distribution after fiber breakage (AFIS or sample preparation device + IsoTester) is a better predictor of spinning efficiency and yarn quality than the length distribution without fiber breakage (IsoTester). To do this, spinning tests should be undertaken.

A complete analysis of the results will be published in the near future.